

Chapter - 5 Forest Management

The main objective for Forest Management on the Chesapeake Forest is to maintain a sustainable and economically self-sufficient forest. This is to be achieved by including objectives that provide for clean water, soil stabilization, support for populations of native plants and animals, protect areas with critical functions or habitats, sustain compatible economic uses and provide for scenic, recreational and educational values. Accomplishing these objectives will be done through implementation of the Annual Work Plan.

1. Priority Management Layers

In order to meet the above objective on, *protecting areas with critical functions or habitats*, a determination had to be made on the various levels of forest management activities that could occur across the entire Chesapeake Forest. To accomplish this goal a GIS analysis was done detailing all the special habitat areas on the Forest. Through this analysis three different habitat management areas were identified as requiring special management recommendations, they are in priority order: Ecologically Significant Areas (ESA), Core Forest Interior Dwelling Bird habitat (FID) and Delmarva Fox Squirrel habitat (DFS). These special habitat areas do not prohibit timber harvest activities, but instead utilizes forestry management operations to enhance the habitat. In Table 1, the acreage listed for each habitat area is based on the priority of that habitat area. For example, ESA areas have the highest priority for habitat management, a specific ESA area may also contain some Core FID habitat acreage and some DFS habitat acreage, but the priority for management is for that ESA species. On the contrary the acreage listed for Core FID areas may contain DFS acreage but does not include any ESA acreage. The *General* designation listed in Table 15 is for that acreage on the forest that is not impacted any of the three priority habitat areas.

TABLE 15: Management Layers				
Designation	Total CF Forest Area		CFL Loblolly Pine Forest	
	Acres	%	Acres	%
ESA	13,993	23.9	10,108	21.6
CORE FIDS	2,108	3.6	1,641	3.5
DFS	25,176	43.1	20,654	44.2
GENERAL	17,170	29.4	14,368	30.7
TOTAL	58,447	100	46,771	100

Note: The total Chesapeake Forest Land acreage listed above is based on forest type mapping and is not the deeded acreage listed in the county tax records, which tends to differ by each forest tract.

2. Forest Types – Chesapeake Forest Lands

Acreages listed for each forest type is only an approximation based on current forest inventory data and survey information. Acreages for each forest type will continually change overtime as additional riparian buffers are established and new forest inventory data are provided.

(1) Non-Forested Lands (1,265 acres or 2.2% of the forest)

Included in the non-forested types, are 1,071 acres of open marsh & swamps, and 194 acres of power lines and agriculture fields. The Chesapeake road system comprises 260 miles of main access roads and side feeder roads. This amounts to approximately 788 acres of open land that is not reflected in the acreage under the non-forest type.

(2) Forested Swamps with mixed hardwoods, bald cypress and Atlantic White cedar (1,898 acres or 3.2% of the forest)

Since this forest type tends to retain surface water all year the management prescription will be to protect their wetland functions. Where possible through restoration activities some of these sites will be expanded through the planting of wetland forest species such as Atlantic White Cedar.

(3) Mixed pine-hardwood, hardwood-pine and mixed hardwood forests (about 8,513 acres, or 14.6% of the forest)

Within these three forest types there are 1,830 acres of what is currently classed as cutover merchantable forest. These are stands that have had the loblolly pine harvested, leaving some residual mixed hardwoods. The current management goal will be to monitor sites for natural regeneration and work toward a mixed pine-hardwood forest.

The remainder of these forest types will be managed toward mature stands of mixed forest, with commercial thinnings, selection harvesting and small-opening harvests designed to encourage regeneration of desired species such as oak. A minimum post-harvest basal area of 70 square feet will be the target. Herbicides will be limited to ground applications to achieve specific goals in improving species balance or removing invasive species, and fertilizers will not be used outside of test plots where mixed forest is the management objective.

Within this forest type approximately 2,865 acres fall into general forest management areas (*see description “General Forest Management Areas” under Loblolly Pine Forest*), the remaining acreage contains 2,480 acres of ecologically significant areas, 2,117 acres of DFS areas and 1,050 acres of CORE FID habitat. Acreage in this type will increase over time as water quality buffers are established along riparian areas in pine plantations.

(4) Loblolly Pine Forest (46,771 acres, or 80% of the forest)

This forest type is made up of loblolly pine plantations and naturally regenerated loblolly pine forest. Other tree species mixed in this forest type are a variety of gums, maples, oaks, Virginia pine and some Shortleaf pine.

Based on field reviews, Loblolly pine forest will be categorized into four different management classifications. These different management classifications take into account all ecologically significant areas on the forest. Acreages listed under the different classifications are only estimates that will change over time as field reviews add or remove areas for one management classification to another. The management areas are as follows: 1) *General forest management areas*; 2) *Ecologically Significant Areas (ESA)*; 3) *Core Forest Interior Dwelling*

Birds (FIDS) areas; 4) Delmarva fox squirrel (DFS).

3. Forest Management Guidelines

The following are the management guidelines for the 58,447 acres of Chesapeake Forest Lands.

(1) General Forest Management Areas (14,368 acres or 30.7% of the loblolly pine forest.)

General Forest Management areas are those sites unconstrained by other more demanding management restrictions. It is important to note that production of forest products in no way precludes the contribution from these lands to other forest functions such as recreation, habitat, and water quality. In the general management areas, the loblolly pine forest will be managed on a 30-40 year rotation for a mixture of sawlogs and pulpwood. In the early years of implementing this plan, it may be necessary to harvest some younger stands, as this is the only way to re-distribute stand ages so that the current preponderance of 5-25 year-old stands does not become a recurring problem in future management rotations.

Loblolly pine forest within the general management areas will be managed to produce a rapidly growing, vigorous and healthy forest while supporting local natural resource based industries and at the same time protecting water quality through adherence to Best Management Practices. In this forest type, wildlife habitat will be early and mid-successional habitat that provides structural diversity within the array of mixed forest stands and riparian, wetland, and wildlife buffers.

(2) Ecologically Significant Areas (10,108 acres or 21.6% of the loblolly pine forest).

In the designated ESA management prescriptions will vary widely, many of these areas also have identified DFS, and core FIDS habitat. Prescriptions can vary from those of Core FIDS and DFS listed below to more extreme thinning regimes that can range to as low as 50 square feet of basal area. Management prescriptions will be written for each ESA. See Chapter 7 of the plan for more detailed explanations on ESA areas.

(3) Core Forest Interior Dwelling Bird Habitat (1,641 acres or 3.5% of the loblolly pine forest).

In the designated core FIDS areas as thinning operations occur, basal areas will not fall below 70 square feet per acre. Long rotation ages greater than 60 years will be the goal and the preferred harvest method will be singletree selection. When regeneration harvests are the only alternative, they will be grouped together to avoid fragmenting the forest. Mixed stands of pine and hardwoods will be encouraged, and the use of herbicides will be avoided except to control invasive species and for research. See Chapter 8 and Appendix E: FIDS/Forestry Task Force Timber Harvest Guidelines for more detailed explanations.

(4) Delmarva Fox Squirrel Habitat (20,654 acres, or 44.2% of the loblolly pine forest.)

In the designated DFS areas, loblolly pine forest will be managed on longer rotations while encouraging an additional hardwood component in the overstory. The goal is to grow larger trees and hold them longer on the landscape. Regeneration harvests will occur at age 50 to 80 and are designed to encourage natural regeneration, followed by pre-commercial and commercial thinnings that will favor “mast producing” hardwoods (nut bearing trees such as oaks) mixed in with the pine forest. The plan requires that over half of the DFS areas at any point in time remain in stands that are 25 to 30 years old or older. In Chapter 8 of this plan

DFS areas are broken out into three separate types, however for the purpose of forest management all three areas will be managed based on the guidelines for Core DFS areas. See the specific recommendations for DFS areas in Chapter 8 of this plan.

4. Forest Management Activities

Regeneration & Site Preparation

Either natural regeneration (seeding from remaining seed trees or adjacent stands) or artificial regeneration will be used to re-establish loblolly pine stands in accordance with Maryland's pine tree reforestation law. Both methods of regeneration will seek to reduce soil disturbance associated with site preparation practices, such as shearing, piling, bedding, ditching, etc. Bedding will be avoided in soil management group 2. This will require careful harvest planning to achieve natural regeneration wherever possible, as well as testing new techniques and equipment that promise to achieve desired regeneration results with acceptable costs and reduced soil disturbance.

The Land Manager is responsible for developing a regeneration strategy outlining what practices will be used with each timber harvest plan, based on the specific conditions involved. Pre- and post-harvest data, as well as establishment surveys and BMP compliance (Best Management Practices) data will be collected and evaluated to measure the success of each regeneration project.

There will be situations where artificial regeneration using some form of site preparation will improve seedling growth and survival. In the past shear-pile-bed followed by artificial regeneration was used on approximately 75% of the regeneration acres. Currently, the practice is rarely used and is slated for acreage where no other alternative is available to re-establish a productive forest. The overall goal is to continue to reduce and eventually phase out the use of shear-pile-bed in favor of other forest management practices, such as prescribed fire, natural regeneration and or straight planting, herbicides and other less intensive mechanical prescriptions.

Vegetation Control

Outside of riparian, wetland, and wildlife buffers, chemical control of competing hardwood and herbaceous vegetation may be used to enhance survival and diameter growth of pine trees. (Inside buffers. Core FIDS and DFS areas, a hardwood component is desirable). Vegetation control can be done with chemical application with no adverse environmental impact if label directions and best management practices are followed. However, the Department will work to minimize the use of chemical control by exploring the use of lower application rates and prescribed burns. Research plots will be established to monitor the effectiveness of various herbicide rates.

Pre-commercial Thinning

Pre-commercial thinning in 6 to 10 year old naturally regenerated stands is a form of density control that is useful to concentrate growth on larger stems and to maintain an even distribution of trees across the site and is a practice usually accomplished by hand crews. As management activity shifts away from intensive site preparation and more towards natural regeneration, pre-commercial thinning will play a more important role.

Commercial Thinning

Commercial thinning is performed several times during the life of the stand, to extract value at an earlier date while concentrating growth on more desirable, larger diameter stems.

Typically, a first thinning between the age of 15 to 18 years will remove every fifth row in a plantation and smaller trees in residual rows. A first thinning will produce pulpwood-sized material. A second thinning which typically occurs between the age of 25 to 30 years will again remove smaller diameter trees but also produce merchantable sawtimber. Based on management prescriptions for a particular site, any subsequent thinnings will produce higher quality merchantable sawtimber. Thinning will be a crucial tool in areas managed for DFS. Thinning from below in these areas will result in bigger trees over the life of the stand. Thinning should leave a minimal residual basal area of about 70 sq. ft. per acre unless another target is prescribed for a specific habitat or silvicultural goal. Thinning operations should be suspended when wet soil conditions cause rutting in excess of 6" over more than 5% of the corridors.

Forest Buffer Thinning

Riparian and wetland forest buffers, as well as any other buffers such as visual buffers, are identified and established at the time thinning projects are planned. Field marking of buffers is done to establish boundaries in the field. GPS mapping provides the means to update the stand boundaries in the GIS data system. Thinning activities within buffer areas are designed to enhance buffer quality and function under the guidelines contained in Chapter 6 of this plan. They may vary from allowing no thinning where desirable vegetative conditions are well established, to a heavier thinning where dense pine stands need to be opened up to allow hardwood development. Where mechanized thinning is done within the buffer areas, special care will be taken to prevent rutting or other soil damage that could lead to reduction of buffer capacity or quality. Individual buffer prescriptions are proposed by the Land Manager and reviewed by the Interdisciplinary Team as part of the Annual Work Plan Review.

Regeneration Harvest

Loblolly pine is intolerant of shade, and regeneration is best on sites with exposed mineral soils and full sunlight. Clearcut harvesting provides the optimum conditions for subsequent stand establishment. Clearcut harvesting on upland loblolly pine forest that is properly planned and follows best management practices can be expected to have little or no impact on water quality. The goal will be to maintain a maximum regeneration harvest area of 40 acres in keeping with Forest Stewardship Council (FSC) standards. Guidelines for clearcut harvest larger than 40 acres will be based on forest health, economic, and ecological necessity. Cutting boundaries should follow natural boundaries on land to encourage irregular shapes that help diversify wildlife habitats and improve aesthetic appearance. Clearcut harvests will not be done until adjacent stands have reached the age of 3 years or an average tree height of six feet, in keeping with the SFI standard.

Forest harvest by the shelterwood method will be utilized in some areas based on ecological needs of the site with the intention of developing a new forest stand through natural regeneration.

Prescribed Burning

The local forests were historically shaped by a regime of frequent, low-intensity wildfires, done primarily by Native Americans who used fire as their primary management tool to gain forest products such as game and edible plants (Appendix F). Prescribed fire can re-introduce ecological processes such as seed release and nutrient cycling that may not be possible in its absence, and can have beneficial effects on wildlife habitat through the re-distribution of nutrients and vegetation. However, with the urbanizing landscape and increasing number of poultry houses, fire will be difficult to re-introduce on Chesapeake Forest lands and will require

careful planning. Land Managers will need to designate areas where significant re-introductions of prescribed fire can be tested and results measured. In implementing these projects, close collaboration between the DNR Land Manager and the Contract Land Manager can result in training for fire management staff, use of specialized equipment, and reduction of costs. All prescribed burning applications will be implemented using smoke management practices. Prescribed burns will not take place if smoke conditions impact sensitive areas such as roads, airports, hospitals, homes, or schools. A prescribed fire should be kept at least 1000 feet from any occupied building. Special areas that might be destroyed or damaged, such as cemeteries, will be protected from burning activities. Fire line construction will follow State BMP's.

Fertilization

All lands are required to have nutrient management plans before fertilization can occur. As part of nutrient management, all loblolly pine forest considered for fertilization will be soil tested, and the amount, content, and chemical formulation of fertilizers will be based on soil and plant needs to minimize the chance for over-application. Fertilizers will be only be used in the General Forest Management areas, as part of the effort to improve forest health and economic return, and will be accompanied by monitoring of growth, soil fertility, ground water nutrients, and surface water impact. They will not be used on areas designated as water quality zones, non-operable wetlands, wildlife buffers, or special areas, or on the mixed forests. If water quality monitoring shows that fertilization in certain soils or situations creates a meaningful increase in N or P to adjacent waters, those soils or situations will be added to the areas where fertilization will not be used.

Practice scheduling

Field surveys, GIS-based forest and habitat maps and associated databases and forest models such as TAUYIELD will be the working tools used for the long-range management of the forest and in scheduling harvests and thinnings that are listed in the annual work plans (see chapter 10).

Non-silvicultural forest management activities

A variety of activities beyond silvicultural treatments are required to maintain the health and productive capacity of the forest. External property boundary lines will be marked and maintained (painted and/or posted using approved procedures) to protect the property from inadvertent trespass and to maintain evidence of ownership and management. Existing roads will be maintained where necessary to provide access to tracts for fire management, management activities, and appropriate recreation. Additional roads may need to be constructed in support of silvicultural operations, but these will be limited and, often, closed after the operation is finished. In many areas of the Forest ditches will need to be maintained to insure the successful implementation of both forestry and wildlife management activities. The wildlife management activities will involve both the protection of existing habitat and the creation of new habitat for a variety of endangered species (See Chapter 7 & 8). In addition a variety of Watershed improvement projects will be implemented to improve water quality, restore wetland functions and create habitat for wildlife (See Chapter 6).

For a variety of legal, environmental, safety, and operational reasons, access to Chesapeake Forest roads along with permitted activities on the Forest will be controlled in accordance with Chesapeake Forest regulations that are now being developed. Gates will be installed, maintained, and well marked. Incursions on Chesapeake Forest land (such as dumping or unauthorized construction of temporary structures) will be monitored and dealt with promptly

using legal sanctions if necessary.

Roads

Roads are important for management and public access. Existing roads and trails will be used and maintained in a manner that minimizes erosion and piled debris along road edges. They should also be maintained to blend with the natural topography and landscape and avoid blockage of drainage systems. While additional permanent roads are not needed on the Chesapeake Forest Project, any road construction (even temporary access trails) will follow State BMP guidelines. Care will be taken in constructing logging entrances along public roads and in using public roads during harvesting operations. Damage to roadbeds, shoulders, ditches, culverts, and buffer strips should be avoided and promptly repaired. Roads within Riparian Forest Buffers or Wildlife Areas should be closed and re-seeded where practical. Other roads should be reviewed from time to time, and those not needed for forest or game management purposes or access should be considered for closure.

Forest Health

One of the key aspects for maintaining forest health is to keep the forest actively growing and not let the forest stagnate. This can be accomplished by implementing a thinning program that releases selected trees for rapid and vigorous growth. This will improve forest health through reducing plant stress and competition for moisture, light and nutrients. By maintaining actively growing trees they are less likely to be impacted by forest insect infestations, such as the pine bark beetle. By reducing stand density through thinning and opening up the forest, wildfire intensity will also be reduced and resulting damage to trees will be lessened.

Financial Returns

The long-term goals of the loblolly pine forest, including the longer rotations for DFS and CORE FIDS habitat, should provide sustainable economic performance as well as contribute to water quality protection and wildlife habitat enhancement. Over the next decade, financial returns from timber will be fairly low. This is due only to the young age of the plantation stands, and is not a function of the management plans approach to environmental protection or sustainable forests. However, if future policy changes are made to the levels of environmental protection and additional acreage is moved from “General Forest Management” to other management prescriptions, then significant impacts on financial returns could result.

Future financial projections will depend on the specific parcels, their stand condition, and the markets. Yearly harvest acreages are determined through forest modeling, deviations larger than 10 percent from these acreage targets should be explained in the Annual Work Plan. This should be accompanied by new model outputs indicating that the target is consistent with the goal of long-term sustainability.

5. Forest Option Modeling

Sustainable forest management relies on the ability to predict future forest growth and change so that management actions can achieve desired future conditions. The Chesapeake Forest Project will utilize forest models, field surveys, monitoring, and GIS information to help meet planning needs. In addition through this process, maximum and minimum harvest levels should be established and adhered to on an annual basis.

Based on their ability to meet our future planning needs, TAUFIELD and HABPLAN were the forest models used in the initial development of the Sustainable Forest Management Plan on

the donated portion of Chesapeake Forest. Current harvesting levels that are identified in the annual work plans are based on the projections from these two forest models. Since 1999 when the initial plan was developed, the management focus has shifted to refining the current plan to cover the entire Chesapeake forest. This includes fully defining the boundaries of the various forest and habitat management layers. This may require a shift from the types of forest models initially used to others that will better incorporate a variety of harvesting prescriptions across the entire forest.

In order to utilize the most up to date forest stand and sensitive species information for the new runs on the forest models, a continuous forest inventory (CFI) will be established. This new inventory will be started in the spring of 2004 with the intention of re-sampling all plots every five years. By the end of 2004 the new inventory data will be run through the forest models and based on the new information adjustments to forest harvest levels and other management planning activities will be made and reflected in the annual work plans.

6. Inventory and Monitoring

A high quality inventory and monitoring program that is linked to a GIS-based data management system is the key to a successful adaptive management program. It is, however, one of the often-neglected or under-funded parts of a land management program. This plan's successful implementation rests on the capacity of the Department to find the resources needed to support the necessary monitoring program across all the areas listed below (*See Chapter 10 - Chesapeake Forest Monitoring Plan*). An inventory and monitoring program is also one of the important aspects of the Forest Certification program (*See Forest Certification below*).

Monitoring activities can be expensive, and the necessary funding may be difficult to acquire, particularly in the early years of this plan. This raises a quandary, since some of the more important data requirements are those taken at the outset of the new management regime, to establish baseline information from which the changes and effects caused by management can be gauged.

A long-term goal is to dedicate ten percent (10%) of the Chesapeake Forest Land revenues to the monitoring program. However during the first several years of this plan, timber revenues will be small because of the young forests so the goal is set at five percent (5%) for those years. A pro-active program seeking additional or outside funding assistance and cooperation from both public agencies and outside institutions will be carried out to help produce the needed programs and broaden scientific input during these critical early years.

A full inventory of the Chesapeake Forest Project does not exist, and the current planning outputs are based on general growth and yield experience for loblolly pine plantations in the Mid-Atlantic, as well as the past experience on these lands. The goal for the Chesapeake Forest Project is that these lands will be utilized as living laboratories to provide insight on the health and vigor of the forests, the effectiveness of management approaches, and useful data for future planning and management.

The Land Manager is responsible for developing and maintaining an interactive data collection and management system to facilitate field management as well as document activities, results, yields, etc., to provide data input to the planning models. A statistically valid and multi-tiered sampling procedure has been developed to provide data on growth rates, yield response to management practices such as fertilization, and associated environmental impacts such as water quality or habitat changes.

Monitoring for forest sustainability will require attention to the parameters listed in Chapter 1, Section 9. *That will require monitoring of:*

- Soil quality – through regular soil testing, particularly on plantations where more intensive forest management is practiced.
- Biodiversity– information is needed that ties species or suites of species to particular areas, soil types, or vegetative structural conditions so that trends can be predicted under various management options and population or species increases or declines can be detected. Because of the heavy emphasis on providing additional habitat for Delmarva fox squirrel, particular attention should be paid to the impact of these activities on those populations.
- Water quality, particularly as it relates to nutrient and sediment loads that can be attributed to specific forest management practices.
- Ecologically Significant Areas – an updated inventory of special areas, by type, location, and condition should be maintained to assure that none are being adversely affected by forest management activities.
- Economic performance – Data for long-term trend analysis, as well as quarterly reporting, should be developed and maintained.

Water Quality Monitoring

Due to the special attention on water quality in the Chesapeake Bay, and the need to document more clearly how commercial forest management affects water quality, special efforts will be made to utilize the Chesapeake Forests Project as a learning laboratory on these matters. Part of that effort will involve seeking out independent third-party partners such as Universities and non-profits like Chesapeake Bay Foundation, to share in the monitoring effort, conduct research, and utilize the management actions on the land as an ongoing scientific experiment.

Timber Harvests – As part of the adaptive management program for the Chesapeake Forest Project, the land manager will ensure that for each harvest operation a pre-harvest plan is developed and a post harvest BMP inspection report is prepared and maintained on file. Additionally, an independent, third party entity will conduct a BMP compliance survey on a randomly selected sample of harvest operations. The audit will consist of inspecting BMP compliance, noting any problems and efforts to address such problems, and conducting water quality monitoring upstream and downstream of the harvest tract both before and after the harvest operation. An important aspect to protect water quality on timber harvest sites is to insure a certified Master Logger carries out the harvest operation.

Fertilizer and Herbicide Applications – As part of the adaptive management program for the Chesapeake Forest Project, the land manager will maintain records of tree growth, application rates, soil nutrient levels, and vegetative community to track the effect of fertilizer and herbicide applications. Additionally, an independent, third party entity with appropriate expertise will be contracted by the Land Manager to conduct a more intensive study on selected plots to determine the fate of fertilizers and herbicides applied to Chesapeake Forest Project lands and to ensure that no meaningful negative environmental impact occurs as a result of applications. The study will examine sites in each soil management group eligible for applications and each geomorphologic province to determine those settings where applications are most effective and those settings where applications should be avoided. For fertilizer applied under a nutrient management plan, the study will determine a mass balance for nitrogen and phosphorus based on tree growth, soil nutrient levels, and ground water concentrations. If feasible, stream monitoring upstream and downstream of the target stand will be monitored periodically both before and after the treatment. For herbicides, the study will determine if measurable amounts are found in adjacent streams, buffers, or groundwater. If measurable

amounts are found, additional studies will be conducted to determine the environmental impacts.

Annual Plan Performance Reporting

Monitoring and reporting of annual plan implementation should occur at several levels. All silvicultural activities will be recorded, including acreage treated, costs, starting and ending dates for the activities, and any outputs of wood or other products. This information is critical for monitoring contract compliance, adherence to planned activity levels, cost reporting, and as a source of feedback for operational and strategic planning efforts. For the Contract Land Manager the data will be summarized and included, along with a complete financial report, in quarterly reports. The Department's Land Manager will be responsible for producing an annual report that summarizes all activities on the Forest.

The results of other monitoring efforts, for example water quality, wildlife trends, or soil fertility levels will be reported periodically, and a report on annual monitoring activities, their costs, and important findings, will be included in the fiscal year annual report developed by the Department's Land Manager.

7. Forest Certification

A primary objective of the Chesapeake Forest Project is to become a national model of certified sustainable forestry. To meet that objective the Chesapeake Forest will seek a combined third-party certification under both the Sustainable Forestry Initiative (SFI) standard and the Forest Stewardship Council (FSC) standard (Appendix: C).

Certification Guidelines

Premise— It is the Department's belief that an independent review and certification of the Chesapeake Forest management plan and practices has the potential to improve the management of the forest and build public confidence in the quality of that management.

The initial thrust of the combined SFI/SFC certification process was on the gifted portion of the Chesapeake Forest utilizing the management plan that came as a condition of the gift. Combined certification on this portion of the forest was obtained in the spring of 2004. By the end of 2004 planning efforts should be completed on a plan for the entire Chesapeake Forest property. Once that process is complete and the new Chesapeake Forest Management Plan is in effect, certification efforts will move forward to include the entire acreage of the Chesapeake Forest. (Reader note: Certification requires a completed management plan) The long-range goal is to have the entire Chesapeake Forest property under dual certification by the end of 2005. As part of the process in maintaining the dual certification, follow-up annual audits/inspections will continue. An annual Senior Management Review will also be conducted, as per SFI requirements (see "Appendix I – Policy for SFI Management Review and Continual Improvement"). The Chesapeake Forest Project remains committed to resolve any audit issues that hinder us in obtaining and or maintaining SFI/SFC certification.

Forest Stewardship Council (FSC) – Guidelines & Principles of Importance

FSC - guideline 6.4- Representative Examples of Existing Ecosystems & Invasive Species Control

In Chapter 5 Section 3, pg. 55 there are four identified management areas on Chesapeake Forest which represent specifically mapped areas that contain samples of existing ecosystems that will be protected through implementation of specific management activities. Three of these areas contain representative samples of fragile and unique ecosystems identified by the Maryland Wildlife and Heritage Service. Listed, within Chapter 7, are the Ecologically Sensitive Species Areas (ESA). Other special areas, such as the Core Forest Interior Dwelling Birds and the Core Fox Squirrel Habitat Areas, are identified in Chapter 8. The management activities in these three areas will be geared toward restoring more natural conditions allowing for natural regeneration of stands to occur. In some of the areas, such as the Core FID and Fox Squirrel sites, management of the natural forest will be geared toward creating old growth stands.

In all areas of Chesapeake Forest Lands where populations of invasive species are identified, a plan for the control and elimination of the species will be developed and included as part of the Annual Work Plan. The plan will then be reviewed by the CFL Interdisciplinary Team and implemented upon approval.

FSC -Principle #9 - High Conservation Value Forests (HCVF)

An initial evaluation to delineate potential HCVF areas on the Chesapeake Forest has been completed. Most of these potential HCVF's are located in riparian water quality areas. The next step in the process will be to review potential HCVF areas in the context of the surrounding landscape of the Lower Eastern Shore through a planning process that includes DNR staff and external forest ecology and conservation experts. This planning process will include additional State Forest properties in conjunction with Chesapeake Forest Lands and will work towards a finalization of HCVF delineation before the end of 2005.

FSC - Principle #10 - Plantations

The General Forest Management area will have management activities geared towards maintaining the various stages of succession for loblolly pine, utilizing natural regeneration where appropriate to increase species diversity within plantations. With plantations in the other three management areas described in Chapter 5, natural regeneration will be a major factor in restoring key areas to natural forest cover.

Included within all four management areas are the water quality/wildlife buffer areas, they are described in Chapter 6. These buffers will include additional layers of protection for ecosystems along streams and within wetland areas. These water quality/wildlife buffer areas will be used to connect blocks of natural forest.